Distance Education and Learning Technologies in Graduate Education

Revitalizing Graduate STEM Education for the 21st Century

May 22, 2015
Two Strategic Objectives at NC State

• **Driving student success**
  – Primarily undergraduate
  – Flexibility for progress toward degree
  – Blended models for improving outcomes in critical path courses

• **Extending our core strengths nationally and globally**
  – Primarily graduate
  – Engineering and other STEM, Management, Ag and Life Sciences, Education, …
1,811 course sections

89 degree, certificate and licensure programs

731 faculty

Student Population FY 2014–15

DE students: 19,155

- DE students
- campus students in DE courses
- other campus students
Unduplicated Overall Student Headcount by Course-Taking Type, Academic Year 2013-14, NCSU

Source: Data from SIS
Percentage of Undergraduate and Graduate Students by Course-Taking Type, Academic Year 2013-14, NCSU

Source: Data from SIS
NC State’s online programs

- Master's
- Graduate certificate
- Bachelors
- Undergraduate minor
- Undergraduate certificate
- Other certificate
- Non-transcripted, including licensure
US News online program rankings

- #6 (tie) in Best Online Graduate Computer Information Technology Programs
- #9 (tie) in Best Online Graduate Engineering Programs
- #18 (tie) in Best Online MBA Programs
- #29 (tie) in Best Online Graduate Education Programs
Graduate online enrollment

![Graph showing Graduate online enrollment from 2009-10 to 2015-16. The graph indicates a steady increase in enrollment across the years, with a notable rise in 2015-16.]
Some emerging trends

• Blended approaches
  • Doctoral programs
  • Learning analytics
  • Virtual reality
  • Alternative credentialing
Delivery modality preferences by age group, 2006 and 2013

Source: Eduventures Consumer Surveys, 2006 and 2013
Delivery modality preferences by age group, 2006 and 2013

Source: Eduventures Consumer Surveys, 2006 and 2013
Delivery modality preferences by age group, 2006 and 2013

Source: Eduventures Consumer Surveys, 2006 and 2013
Delivery modality preferences by age group, 2006 and 2013

Source: Eduventures Consumer Surveys, 2006 and 2013
CH223, Fall ’13
Grade Distributions
Some emerging trends

- Blended approaches
- Doctoral programs
- Learning analytics
- Virtual reality
- Alternative credentialing
• NC State Professional Doctor of Design
  – Launches 2018
  – “The NC State Professional Doctor of Design Program is structured to allow practicing design professionals to complete the program through distance education with the ability to work remotely while attending one week-long workshop each semester.”

• Other examples
  – Johns Hopkins – EdD
  – USC – EdD in Organizational Change and Leadership
  – UNC – Doctor of Physical Therapy
  – UFL – multiple online doctorates
  – and many more…
Some emerging trends

• Blended approaches
• Doctoral programs
• Learning analytics
• Virtual reality
• Alternative credentialing
Open Academic Analytics Initiative

Static data

- Student Attitude Data (SATs, current GPA, etc.)
- Student Demographic Data (Age, gender, etc.)

Dynamic Data

- Sakai Event Log Data
- Sakai Gradebook Data

Predictive Model Scoring

Identified Students “at risk” to not complete course

Intervention (Online Academic Support Environment)
Some emerging trends

• Blended approaches
• Doctoral programs
• Learning analytics
• Virtual reality
• Alternative credentialing
https://issdev.delta.ncsu.edu/ncsuvr/ccc-global-leadership/#choose-pov
Some emerging trends

- Blended approaches
- Doctoral programs
- Learning analytics
- Virtual reality
- Alternative credentialing
What is Alternative Credentialing?
Recognition of knowledge gained through non-degree coursework

What forms can it take?

**Digital badges**
are online representations of skills learned by students, typically with visual iconography.

**Certificates**
are credentials typically issued by educational institutions to students who have completed significant programs of study that do not culminate in a degree.

**Micro-credentials**
are granular, digitally presented certifications offering evidence that an individual has mastered a specific skill or area of knowledge, with links to detailed criteria, endorsements, or demonstrations of their learning.

Types of Alternative Credentials
Non-traditional offerings are most likely to lead to alternative credentials

96% of provosts believe that universities are doing a good job in preparing students for the work force.  

*Inside Higher Ed 2014 CAO survey*

33% of U.S. business leaders agree with them.

*2013 Gallup U.S. Business Leaders Poll on Higher Education*